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Conference Abstract

Comet assay - a sensitive tool for genotoxicity assessment of environmental stress in *Mytilus galloprovincialis* from the Bulgarian Black Sea coast

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Abstract

Assessment of DNA damage is of primary concern when the pollution-related stress in living organisms has to be determined. The reason for this concern comes from the evidence that damages in DNA often lead to mutations which are potential threat for the sustainability of organisms and ecological systems. To monitor genotoxicity of the marine environment we have developed a special procedure for application of the method of Comet assay (CA) on the native populations of *Mytilus galloprovincialis*. Samples were collected from areas with different anthropogenic load along the Bulgarian South Black Sea coast. As the first organ to encounter marine pollutants the gills of the mussels turned-out to be the most appropriate tissue for obtaining a single-cell suspension. Comet assay tests were performed and DNA damage was quantified using several different methods including percentage of DNA in the tail, Comet head and tail area, Comet number, Tail moment, Comet shape, etc. The method allowed us to monitor and predict the genetic risk of marine environmental stressors, particularly persistent pollutants. It proved to be convenient for precise quantification of the on-site loads of genotoxic stress on coastal ecosystems.

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Keywords

Anthropogenic pollution, genotoxic stress, Comet assay, *Mytilus galloprovincialis*

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